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| 09/542,091 | 04/03/2000 | Jose De La Torre-Bueno PH.D. | 10225-023001 | 4964 |

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| EXAMINER | |
|---|---|
| MILLER, MARTIN E | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2623 | |

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13

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/542,091 | TORRE-BUENO PH.D., JOSE DE LA | |
| | Examiner | Art Unit | |
| | Martin Miller | 2623 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 October 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20 and 23-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20, 23-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Response to Amendment*

1. The amendment filed October 10, 2002 has been made of record. Claim 23 has been amended accordingly.

### *Response to Arguments*

2. Applicant's arguments filed October 10, 2002 have been fully considered but they are not persuasive. Applicant asserts that Novik teaches that the remote user has the same image data as the source user. However, the end user merely has the image at the original resolution, Novik states that the color or brightnes information may be lost (col. 7, l. 67-col. 8, l. 2). Novik goes on to state that lossless compression may also be used (col. 10, ll. 53-54) and that lossy compression should be used for efficiency (col. 10, ll. 55-57).

Applicant also argues that one of ordinary skill would not combine Echerer and Novik. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the examiner is relying upon Echerer to teach that image analysis on medical images is well known in the art and that the images provided by Novik may be operated upon in much the same method as Echerer's image data.

Therefore, the examiner maintains his rejection of claims 1-20 and 23-26.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 3-15, 17-20, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Novik US 5432871 and Echerer et al., US 5740267 (hereinafter Echerer).

As per claim 1, Novik teaches:

generating a compressed medical (teleradiology) image from a source medical image (col. 7, lines 33-35, and ll. 55-60) at a first location (figure 2, blocks 201, 202) ;

transmitting the compressed (JPEG , col. 7, ll. 58-60) medical image to a remote view station at a second location for display (figure 2, block 203, col. 7, ll. 60-62, col. 8, l. 15-18);

decompressing the compressed image file (col. 7, l. 67, figure 2, block 204, col. 8, ll. 34-40);

selecting a region ("area of particular interest", col. 8, ll. 41-48) of the decompressed medical image at the second location (figure 2, blocks 204-209;

Novik teaches image processing functions (zooming, color and spectral response, col. 8, l. 62-col. 9, l. 19), he does not specifically teach image analysis. However, Echerer teaches enhancing (processing) medical images and performing analysis on the enhanced images. Echerer teaches:

and applying image analysis operations to a region of the source medical image corresponding to the selected region of the decompressed medical image (col. 4, ll. 17-22 and 36-41, col. 9, ll. 30-33, 37-45, col. 10, ll. 29-36, col. 17, ll. 32-63).

It would have been obvious to one of ordinary skill in the art to utilize the automatic analysis features of Echerer in combination with the image enhancement features of Novik that facilitates interactive control of the image data by a expert located remotely from the image data by correcting compression errors which reduces the tension between medical diagnostic quality image sizes and storage requirements, particularly in remote sites. One would be clearly motivated to utilize the features of both Novik and Echerer because the two disclosures are directed towards solving the problem of the instant invention of providing quality image data without requiring huge amounts of data storage space.

As per claim 3, Novik teaches:

transmitting region separate from the compressed medical image from the remote view station to a image server, wherein the region information defines the selected regions of the displayed medical image. (col. 8, ll. 44-48, 57-60).

As per claim 4, Novik teaches:

the region information is a series of pixels (col. 10, ll. 18-19).

As per claim 5, Echerer teaches:

image analysis operations includes outputting a score (col. 15, ll. 37-65) contrast range analysis function) and communicating the score to a remote view station (col. 5, ll. 25-37) for display (Figure 7, Display analysis).

As per claim 6, Echerer teaches:

receiving a diagnosis at a first location from the remote view station and associating the diagnosis with the source medical image in a database (col. 7, ll. 10-30, col. 10, ll. 30-36) at the first location.

As per claim 7, Novik teaches:

wherein selecting the compressed medical image includes receiving input from a pointing device controlled by a user to outline the region of the compressed medical image (col. 7, ll. 1-8, col. 10, ll. 12-15).

As per claim 8, Novik teaches:

generating a compressed medical image includes applying a compression algorithm that reduces data losses that are detectable with human vision. (col. 7, ll. 58-60, col. 8, ll. 5-15)

As per claim 9, Novik teaches:

applying JPEG compression algorithm (col. 7, ll. 58-60, col. 8, ll. 5-15).

As per claim 10, it recites substantially the same limitations as claim 1 above and analogous remarks apply except for the following limitation, which is taught by Novik:

the remote viewing station includes an input device for selecting a region of the compressed medical image. (col. 7, ll. 1-5).

As per claim 11, it recites the same limitations as claim 4 above and analogous remarks apply.

As per claim 12, it recites the same limitations as claim 5 above and analogous remarks apply.

As per claim 13, it recites the same limitations as claim 6 above and analogous remarks apply.

As per claim 14, it recites the same limitations as claim 7 above and analogous remarks apply.

As per claim 15, it recites substantially the same limitations as claim 1 above and analogous remarks apply.

As per claim 17, it recites the same limitations as claim 4 above and analogous remarks apply.

As per claim 18, it recites the same limitations as claim 5 above and analogous remarks apply.

As per claim 19, it recites the same limitations as claim 6 above and analogous remarks apply.

As per claim 20, it recites the same limitations as claim 8 above and analogous remarks apply.

As per claim 26, it repeats substantially the same limitations as claim 6 above as rejected by Novik and Echerer and analogous remarks apply.

It would have been obvious to one of ordinary skill in the art to utilize the automatic analysis features of Echerer in combination with the image enhancement features of Novik that facilitates interactive control of the image data by a expert located remotely from the image data by correcting compression errors which reduces the tension between medical diagnostic quality image sizes and storage requirements, particularly in remote sites. One would be clearly motivated to utilize the features of both Novik and Echerer because the two disclosures are directed towards solving the problem of the instant invention of providing quality image data without requiring large amounts of data storage space.

As per claim 23, Novik teaches:

compressing a source medical image at a first compression level (JPEG, col. 7, ll. 55-66);

transmitting the compressed medical image to a remote view station at a second location for display (figure 2, block 203);

receiving at a first location region information separate from a decompressed (col. 87, ll. 34-36) medical image (col. 8, l. 57-60, figure 2, block 205) from the remote view station, said decompressed medical image generated from the compressed medical image at the remote view station, wherein the region information defines a region of the decompressed medical image (col. 8, ll. 44-48);

Novik teaches image processing functions (zooming, color and spectral response, col. 8, l. 62-col. 9, l. 19), he does not specifically teach image analysis. However, Echerer teaches enhancing (processing) medical images and performing analysis on the enhanced images. Echerer teaches:

applying image analysis operations to a region of the source medical image corresponding to said region of the decompressed medical image at the first location (col. 4, ll. 17-22 and 36-41, col. 9, ll. 30-33, 37-45, col. 10, ll. 29-36, col. 17, ll. 32-63).

Novik does not specifically teach that the region of the source medical image will be compressed at second compression level as a function of the region information. However, Novik teaches that the user chooses the quality factor Q of the compression based upon the detail required of the particular area of interest. Therefore, Novik teaches:

compressing a region of the source medical image at a second compression level (col. 8, ll. 8-15) at the first location as a function (Quality required, col. 8, ll. 29-33) of the region information, wherein the second compression level results in less information loss that the first compression level.

It would have been obvious to one of ordinary skill in the art to use different levels of compression based upon the narrow field of view selected and the desired level of image quality by the end user in which to compress the particular area of interest data. This allows for even further reduction of data if the image quality is not that critical or allows for immediate high quality image data for fields of view that indicate problem areas. It would have been, further, obvious to one of ordinary skill in the art to utilize the automatic analysis features of Echerer in combination with the image enhancement features of Novik that facilitates interactive control of the image data by a expert located remotely from the image data by correcting compression errors which reduces the tension between medical diagnostic quality image sizes and storage requirements, particularly in remote sites.

As per claim 25, Novik teaches:

the region information is a series of pixels (col. 10, ll. 18-19).

5. Claims 2, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Novik and Echerer as applied to claims 1 and 15 above, and further in view of Wood.

Neither Novik nor Echerer specifically teaches that the network used to transmit the medical image data is over a global packet switched network. Novik teaches transmitting the compressed medical image (figure 2, block 203).

But as per claims 2 and 16, Wood teaches:

a global packet switched network (col. 4, l. 11).

It would have been obvious to one of ordinary skill in the art to use the medical image data transmission suggestions of Wood with the Image processing and analysis functions of Novik and Echerer to since the packet-switched approach to data transmission "became the

choice of internetworked computers due to the advantages of cost and performance" (Wood, col. 4, ll. 11-13).

As per claim 24, neither Novik nor Echerer specifically teaches that the network used to transmit the medical image data is over a global packet switched network. Although, Novik teaches transmitting the compressed medical image (figure 2, block 203). But Wood teaches:

As per claim 24, Wood teaches:

a global packet switched network (col. 4, l. 11).

It would have been obvious to one of ordinary skill in the art to use the medical image data transmission suggestions of Wood with the image processing of Novik since the packet-switched approach to data transmission "became the choice of internetworked computers due to the advantages of cost and performance" (Wood, col. 4, ll. 11-13).

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Miller whose telephone number is (703) 306-9134. The examiner can normally be reached on Monday-Friday, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

mem
December 30, 2002

AMELIA M. AU
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